The Wheel of Design – Usability Driven Improvements to the GeoVITe User Interface

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Extended Abstract

GeoVITe (GEOdata Visualization and Interactive Training Environment) is a geodata-sharing portal, providing ETH Zurich employees with direct access to Geoinformation and Geoservices through a user-friendly Web-based graphical user interface (GUI) as shown in *Figure 1*. At ETH Zurich, geodata are needed in a wide range of academic disciplines such as environmental management, architecture, transport planning, landscape development, infrastructure management and many others fields.
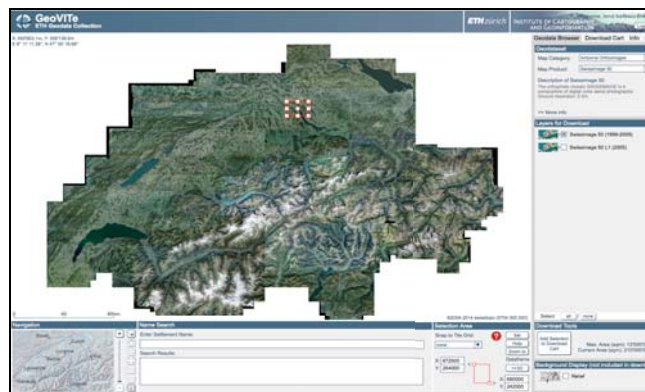

Figure 1. GeoVITe user interface

The guiding functional requirement for the GeoVITe geoportal is that a user should visually navigate (spatially, thematically and temporally) the spatial data, select the desired dataset and area, and directly download the required data in a straightforward manner through a standard Web browser. GeoVITe was therefore designed to identify, select and swiftly download the correct dataset using a service-driven architecture (Iosifescu et al. 2011).

The current user interface of the GeoVITe portal implements the above functional requirement by providing a clear visualization of available geodata products, by facilitating the choice of the right data (map product and location), and by hiding the complexities related to merging and extracting the needed data extent while seamlessly integrating specific services such as reprojection of data or on-demand generation of contour lines from digital elevation models. Recently however, Geodata4SwissEDU, a two-year cooperation project between three partners (the ETH Library, the Institute for Cartography and Geoinformation at ETH Zurich and the HSR Hochschule für Technik Rapperswil) and substantially co-financed by swissuniversities.ch, aims to extend the easy access to geodata to the entire public universities and research institutions' landscape in Switzerland. In the frame of this project, the GeoVITe GUI was put under scrutiny with the help a professional usability test. The usability test, which was performed using eye-tracking equipment in a laboratory setting, has revealed some important facts and suggestions for improvement. For example, the usability test captured the subjective satisfaction of the users (on a Likert-type scale from 1 to 7) and the necessity of existing functionalities (on a Likert-type scale from 1 to 4). These results allowed the technical design and development team to focus on the aspects that are the most important for the users and create improved design alternatives such as the one presented in *Figure* 2.
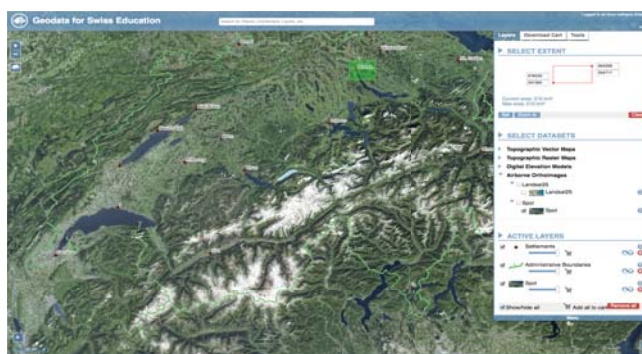

Figure 2. Design alternative for the GeoVITe user interface

As outlook, the possibilities for scaling of the back-end computing infrastructure using Amazon Web Services are discussed. The discussion of the different GUI design alternatives based on a usability study is of interest for any cartographer involved in user interface design for geoportals.

References

Iosifescu Enescu C, Iosifescu Enescu I, Jenny H, Hurni L (2011) GeoVITe - A Service-driven Solution for an On-demand, User-friendly Web Access to Geodata. Proceedings of the 25th International Cartographic Conference, Paris, France